ZooKeys 179: 41–53 (2012)
doi: 10.3897/zookeys.179.2580
www.zookeys.org

RESEARCH ARTICLE

A peer-reviewed open-access journal
ZooKeys
Launched to accelerate biodiversity research

New Coleoptera records from New Brunswick, Canada: Eucinetidae and Scirtidae

Reginald P. Webster[1], Jon D. Sweeney[1], Ian DeMerchant[1]

1 *Natural Resources Canada, Canadian Forest Service - Atlantic Forestry Centre, 1350 Regent St., P.O. Box 4000, Fredericton, NB, Canada E3B 5P7*

Corresponding author: *Reginald P. Webster* (reginaldwebster@rogers.com)

Academic editor: *R. Anderson* | Received 21 December 2011 | Accepted 21 February 2012 | Published 4 April 2012

Citation: Webster RP, Sweeney JD, DeMerchant I (2012) New Coleoptera records from New Brunswick, Canada: Eucinetidae and Scirtidae. In: Anderson R, Klimaszewski J (Eds) Biodiversity and Ecology of the Coleoptera of New Brunswick, Canada. ZooKeys 179: 41–53. doi: 10.3897/zookeys.179.2580

Abstract

We report two species of Eucinetidae, *Nycteus oviformis* (LeConte) and *Nycteus punctulatus* (LeConte), new to New Brunswick, Canada and confirm the presence of *Nycteus testaceus* (LeConte). *Nycteus oviformis* is newly recorded from the Maritime provinces. Additional locality data are provided for *Eucinetus haemorrhoidalis* (Germar) and *Eucinetus morio* LeConte. Five species of Scirtidae, *Cyphon ruficollis* (Say), *Prionocyphon discoideus* (Say), *Sacodes pulchella* (Guérin-Méneville), *Elodes maculicollis* Horn, and *Sarabandus robustus* (LeConte) are added to the New Brunswick faunal list. *Sarabandus robustus* is newly recorded from Canada; *Cyphon ruficollis*, *P. discoideus* and *S. pulchella* are new for the Maritime provinces. Collection and habitat data, and distribution maps are presented for these species.

Keywords

Eucinetidae, Scirtidae, Scirtoidea, Canada, New Brunswick, new records

Introduction

This paper treats new records from New Brunswick of two related families of beetles, the Eucinetidae and Scirtidae. The Eucinetidae of the Maritime provinces (New Brunswick, Nova Scotia, Prince Edward Island) of Canada was recently treated by Majka (2010), who reported two species from New Brunswick. Campbell (1991a) reported seven species of Scirtidae from New Brunswick. However, there have been no recent treatments of this family from the region. Intensive sampling in New Brunswick by

Copyright *Her Majesty the Queen in Right of Canada.* This is an open access article distributed under the terms of the Creative Commons Attribution License 3.0 (CC-BY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

the first author since 2003 and records obtained from by-catch samples from Lindgren funnel traps in various New Brunswick forest habitats from 2008–2011 have yielded additional new provincial records in the above families. The purpose of this paper is to report on these new records. A brief synopsis of each family is included in the results below.

Methods and conventions

The following records are based on specimens collected during a general survey by the first author to document the Coleoptera fauna of New Brunswick and from by-catch samples obtained in trapping experiments testing attractants for surveying Cerambycidae. Additional provincial records were obtained from specimens contained in the collection belonging to Natural Resources Canada, Canadian Forest Service - Atlantic Forestry Centre, Fredericton, New Brunswick.

Collection methods

Various methods were employed to collect the species reported in this study. Details are outlined in Webster et al. (2009, Appendix). Many specimens were also collected from Lindgren 12-unit funnel trap samples. These traps mimic tree trunks and are often effective for sampling species of Coleoptera that live in microhabitats associated with standing trees (Lindgren 1983). See Webster et al. (in press) for details of the methods used to deploy the Lindgren 12-funnel traps and of sample collection. A description of the habitat was recorded for all specimens collected during this survey. Locality and habitat data are presented exactly as on labels for each record. This information, as well as additional collecting notes, is summarized and discussed in the collection and habitat data section for each species.

Specimen preparation and determination

Keys in Downie and Arnett (1996) and Majka (2010) were used to determine specimens of Eucinetidae. Klausnitzer (1976) and Epler (2010) were consulted for determining Scirtidae specimens. Specimens were compared with material in the Canadian National Collection of Insects for confirmation.

Distribution

Distribution maps, created using ArcMap and ArcGIS, are presented for each species in New Brunswick. Every species is cited with current distribution in Canada and

Alaska, using abbreviations for the state, provinces, and territories. New records for New Brunswick are indicated in bold under Distribution in Canada and Alaska. The following abbreviations are used in the text:

AK	Alaska	**MB**	Manitoba
YT	Yukon Territory	**ON**	Ontario
NT	Northwest Territories	**QC**	Quebec
NU	Nunavut	**NB**	New Brunswick
BC	British Columbia	**PE**	Prince Edward Island
AB	Alberta	**NS**	Nova Scotia
SK	Saskatchewan	**NF & LB**	Newfoundland and Labrador*

*Newfoundland and Labrador are each treated separately under the current Distribution in Canada and Alaska.

Acronyms of collections examined or where specimens referred to in this study reside are as follows:

AFC Atlantic Forestry Centre, Natural Resources Canada, Canadian Forest Service, Fredericton, New Brunswick, Canada

CNC Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada

NBM New Brunswick Museum, Saint John, New Brunswick, Canada

RWC Reginald P. Webster Collection, Charters Settlement, New Brunswick, Canada

Results

Species accounts

All records below are species newly recorded for New Brunswick, Canada unless noted otherwise (additional records). Species followed by ** are newly recorded from the Maritime provinces of Canada; species followed by *** are newly recorded from Canada.

Table 1. Species of Eucinetidae and Scirtidae recorded from New Brunswick, Canada.

Family Eucinetidae Lacordaire
Eucinetus haemorrhoidalis (Germar)
Eucinetus morio LeConte
Nycteus oviformis (LeConte)**
Nycteus punctulatus (LeConte)*
Nycteus testaceus (LeConte)
Family Scirtidae Fleming
Subfamily Scirtinae Fleming
Cyphon collaris (Guérin-Méneville)
Cyphon neovariabilis Klausnitzer
Cyphon obscurus (Guérin-Méneville)
Cyphon ruficollis (Say)**
Cyphon variabilis (Thunberg)
Elodes maculicollis Horn*
Microcara explanata LeConte
Prionocyphon discoideus (Say)**
Prionocyphon limbatus LeConte
Sacodes pulchella (Guérin-Méneville)**
Sarabandus robustus (LeConte)***
Scirtes tibialis Guérin-Méneville

Notes: *New to province, **New to Maritime provinces, ***New to Canada

The classification of the Eucinetidae follows Young (2002a). The classification of the Scirtidae follows Young (2002b) and Bouchard et al. (2011).

Family Eucinetidae Lacordaire, 1857

The Eucinetidae (the plate-thigh beetles) have greatly expanded metathoracic coxal plates that conceal much of the first abdominal segment and the metathoracic legs. Adults live in various kinds of litter or under fungus-covered bark (Young 2002a). Larvae are mycophagous and feed on a variety of fungi (Weiss and West 1921; Wheeler and Hoebeke 1984). Campbell (1991a) reported *Eucinetus haemorrhoidalis* (Germar) and *Nycteus testaceus* (LeConte) from New Brunswick. Majka (2010) reviewed the Eucinetidae of the Maritime provinces and reported *E. morio* LeConte as new but questioned the validity of the *N. testaceus* record from New Brunswick due to lack of a supporting voucher and other published records. Here, we report two additional species, *Nycteus oviformis* (LeConte) and *N. punctulatus* (LeConte) for the province and confirm the presence of *N. testaceus*. *Nycteus oviformis* (LeConte) is newly recorded from the Maritime provinces.

Eucinetus haemorrhoidalis (Germar, 1818)

http://species-id.net/wiki/Eucinetus_haemorrhoidalis
Map 1

Material examined. Additional New Brunswick records. Madawaska Co., Loon Lake, 236 m elev., 47.7839°N, 68.3943°W, 21.VII.2010, R. P. Webster, boreal forest, small lake surrounded by sedges, treading sedges and grasses near *Myrica gale* bushes into water (1, NBM). **Queens Co.**, Cranberry Lake P.N.A. (Protected Natural Area), 46.1125°N, 65.6075°W, 12–21.V.2009, 21–27.V.2009, 5–11.VI.2009, R. Webster & M.-A. Giguère, old red oak forest, Lindgren funnel trap (1, RWC). **Sunbury Co.**, Acadia Research Forest, 45.9816°N, 66.3374°W, 12.V.2007, R. P. Webster, 8.5 year-old regenerating mixed forest, sifting moss and litter (2, RWC); same locality but 45.9866°N, 66.3841°W, 19–25.V.2009, R. Webster & M.-A. Giguère, red spruce forest with red maple and balsam fir, Lindgren funnel traps (2, RWC). **York Co.**, 15 km W of Tracy off Rt. 645, 45.6848°N, 66.8821°W, 19–25.V.2009, 1–8.VI.2009, R. Webster & M.-A. Giguère, old red pine forest, Lindgren funnel traps (2, AFC, RWC); Charters Settlement, 45.8267°N, 66.7343°W, 30.IV.2005, R. P. Webster, *Carex* marsh, in sphagnum in *Carex* hummock (2, RWC); same locality and collector but 45.8331°N, 66.7410°W, 14.IV.2006, mixed forest, in litter and sphagnum (1, RWC).

Collection and habitat data. This species was collected along a lake margin, and in a *Carex* marsh, an old red oak (*Quercus rubra* L.) forest, a mature red spruce (*Picea rubens* Sarg.) forest, an old red pine (*Pinus resinosa* Ait.) forest, a mature mixed forest, and an 8.5-year-old regenerating mixed forest. Adults were collected by treading

sedges (*Carex* sp.) and grasses along a lake margin, sifting moss and leaf litter, and sifting sphagnum from a *Carex* hummock in a *Carex* marsh. This species was capable of jumping out of a 15 cm high sifting box. This species was also captured in Lindgren funnel traps. Adults were collected during April, May, June, and July.

Distribution in Canada and Alaska. NT, BC, AB, SK, MB, ON, QC, NB, NS, PE (Campbell 1991a; Majka 2010). This species was recorded from New Brunswick by Campbell (1991a) based on specimens collected in Kouchibouguac National Park (Kent Co.) and Tabusintac (Northumberland Co.).

Eucinetus morio LeConte, 1853

http://species-id.net/wiki/Eucinetus_morio

Map 2

Material examined. Additional New Brunswick records. Carleton Co., Two Mile Brook Fen, 46.3619°N, 67.6733°W, 6.V.2005, R. Webster & M.-A. Giguère, cedar forest/swamp, in moist sphagnum (1, RWC); Jackson Falls, Bell Forest, 46.2200°N, 67.7231°W, 8.VIII.2006, R. P. Webster, mature hardwood forest, on polypore fungi on dead standing beech (1, NBM); same locality and forest type but 4–12. VI.2008, 27.VI–5.VII.2008, 12–19.VII.2008, R. P. Webster, mature hardwood forest, Lindgren funnel traps (5, AFC, RWC)); same locality and habitat data but 28.IV-9.V.2009, 9–14.V.2009, 14–20.V.2009, 20–26.V.2009, 31.VII–7.VIII.2009, R. Webster & M.-A. Giguère, Lindgren funnel traps (7, AFC, RWC). **Charlotte Co.**, 10 km NW of New River Beach, 45.2110°N, 66.6170°W, 31.V–15.VI.2010, 16–26.VII.2010, R. Webster & C. MacKay, old growth eastern white cedar forest, Lindgren funnel traps (2, AFC). **Queens Co.**, Cranberry Lake P.N.A., 46.1125°N, 65.6075°W, 12–21.V.2009, 21–27.V.2009, 5–11.VI.2009, 28.VII-6.VIII.2009, R. Webster & M.-A. Giguère, old red oak forest, Lindgren funnel traps (4, AFC, RWC). **Restigouche Co.**, Dionne Brook P.N.A., 47.9064°N, 68.3441°W, 31.V-15.VI.2011, M. Roy & V. Webster, old-growth white spruce and balsam fir forest, Lindgren funnel trap (1, NBM). **Sunbury Co.**, Acadia Research Forest, 45.9866°N, 66.3841°W, 19–25.V.2009, 2–9.VI.2009, 16–24.VI.2009, 24–30.VI.2009, 29.VII-4.VIII.2009, R. Webster & M.-A. Giguère, red spruce forest with red maple and balsam fir, Lindgren funnel traps (8, AFC). **York Co.**, Charters Settlement, 45.8286°N, 66.7365°W, 10.VII.2005, R. P. Webster, mature red spruce and cedar forest, in powdery slime mould (1, NBM); same locality but 45.8331°N, 66.7410°W, 17.VIII.2008, R. P. Webster, mature red spruce forest, in polypore fungi on dead standing *Populus* sp. (1, RWC); 15 km W of Tracy off Rt. 645, 45.6848°N, 66.8821°W, 1–8.VI.2009, 28.VI-7.VII.2009, 29.VII-4.VIII.2009, R. Webster & M.-A. Giguère, old red pine forest, Lindgren funnel traps (6, AFC); 14 km WSW of Tracy, S of Rt. 645, 45.6741°N, 66.8661°W, 10–26.V.2010, 16–30.VI.2010, R. Webster & C. MacKay, old mixed forest with red and white spruce, red and white pine, balsam fir, eastern white cedar, red maple, and *Populus* sp., Lindgren funnel traps (2, AFC).

Collection and habitat data. *Eucinetus morio* was found in a variety of forest types in New Brunswick, including mature hardwood forests, an old red oak forest, old and mature mixed forests, an old-growth white spruce (*Picea glauca* (Moench) Voss) and balsam fir (*Abies balsamea* (L.) Mill.) forest, eastern white cedar (*Thuja occidentalis* L.) forests, a mature (110-year-old) red spruce forest, and an old red pine forest. Most specimens were captured in Lindgren funnel traps deployed in the above forest types. Specimens with specific habitat data were collected from moist sphagnum (in eastern white cedar swamp), on polypore fungi on dead standing American beech (*Fagus grandifolia* Ehrh.) and a dead standing *Populus* sp., and in powdery slime mold at the base of a tree. Lawrence and Newton (1980) reported the slime mold, *Stemonitis axifera* (Bull.) as a host for this species, and Weiss and West (1921) reported it from a *Trichia* sp. (Trichiaceae). This species has an amazing jumping ability, and adults often jumped out of a 15 cm high sifting box. Adults were collected during May, June, July, and August.

Distribution in Canada and Alaska. ON, QC, NB, NS (Campbell 1991a, Majka 2010). Majka (2010) newly reported *E. morio* from New Brunswick based on one specimen collected by P. Maltais in Moncton (Westmorland Co.). This is the most common species of Eucinetidae in New Brunswick.

Nycteus oviformis* (LeConte, 1866)*
http://species-id.net/wiki/Nycteus_oviformis
Map 3

Material examined. New Brunswick, Queens Co., Cranberry Lake P.N.A, 46.1125°N, 65.6075°W, 18–31.VIII.2011, M. Roy & V. Webster, old red oak forest, Lindgren funnel trap (1, RWC). **Restigouche, Co.**, Dionne Brook P.N.A., 47.9064°N, 68.3441°W, 27.VI-14.VII.2011, 14–28.VII.2011, M. Roy & V. Webster, old-growth white spruce and balsam fir forest, Lindgren funnel traps (2, RWC). **York Co.**, Charters Settlement, 45.8430°N, 66.7275°W, 30.VI.2008, R. P. Webster, regenerating mixed forest, brushy opening, sweeping foliage (1, RWC).

Collection and habitat data. Adults were captured in Lindgren funnel traps deployed in an old red oak forest and an old-growth white spruce and balsam fir forest. One individual was swept from foliage in a brushy opening of a regenerating (15-year-old) mixed forest. Adults were captured during June, July, and August.

Distribution in Canada and Alaska. MB, **NB** (Campbell 1991a).

***Nycteus punctulatus* (LeConte, 1875)**
http://species-id.net/wiki/Nycteus_punctulatus
Map 4

Material examined. New Brunswick, Queens Co., Cranberry Lake P.N.A, 46.1125°N, 65.6075°W, 18–25.VI.2009, 25.VI-1.VII.2009, 1–10.VII.2009, 28.VII–

6.VIII.2009, R. Webster & M.-A. Giguère, old red oak forest, Lindgren funnel traps (5, RWC); same locality data and forest type, 7–13.VII.2011, 18–31.VIII.2011, M. Roy & V. Webster, Lindgren funnel traps (2, NBM, RWC). **Restigouche Co.**, Dionne Brook P.N.A., 47.9030°N, 68.3503°W, 14–28.VII.2011, 28.VII-9.VIII.2011, 9–23.VIII.2011, M. Roy & V. Webster, old-growth northern hardwood forest, Lindgren funnel traps (7, AFC, NBM, RWC); same locality and collectors but 47.9064°N, 68.3441°W, 27.VI-14.VII.2011, 9–23.VIII.2011, old-growth white spruce and balsam fir forest, Lindgren funnel traps (7, AFC, NBM, RWC).

Collection and habitat data. The New Brunswick adults were captured in Lindgren funnel traps deployed in an old red oak stand, an old-growth northern hardwood forest with sugar maple (*Acer saccharum* Marsh.) and yellow birch (*Betula alleghaniensis* Britt.), and in an old-growth white spruce and balsam fir forest. Adults were collected during June, July, and August.

Distribution in Canada and Alaska. YK, BC, AB, SK, MB, ON, QC, **NB**, NS (Campbell 1991a; Majka 2010).

***Nycteus testaceus* (LeConte, 1866)**
http://species-id.net/wiki/Nycteus_testaceus
Map 5

Material examined. Additional New Brunswick records, Carleton Co., Jackson Falls, Bell Forest, 46.2199°N, 67.7232°W**,** 13.VIII.2007, R. P. Webster, hardwood forest, on gilled mushrooms (4, RWC); same locality but 46.2210°N, 67.7210°W, 25.VII.2007, R. P. Webster, hardwood forest, u.v. light (1, RWC). **Queens Co.**, Cranberry Lake P.N.A, 46.1125°N, 65.6075°W, 25.VI–1.VII.2009, R. Webster & M.-A. Giguère, old red oak forest, Lindgren funnel trap (1, RWC). **York Co.**, Charters Settlement, 45.8395°N, 66.7391°W, 23.VII.2007, 7.IX.2007, R. P. Webster, mixed forest, u.v. light (2, RWC).

Collection and habitat data. *Nycteus testaceus* was collected from gilled mushrooms on the forest floor of a hardwood forest, and at an ultraviolet light in a mixed forest and a hardwood forest. One individual was captured in a Lindgren funnel trap deployed in an old red oak forest. This species was capable of jumping out of a 15 cm high sifting box, resulting in the loss of a number of specimens collected from gilled mushrooms. Adults were captured during July, August, and September.

Distribution in Canada and Alaska. NT, BC, AB, SK, MB, ON, QC, NB (Campbell 1991a). Campbell (1991a) reported this species from New Brunswick. However, Majka (2010) could not find any specimens or published source to support the record and, therefore, considered the status of this species in the province as hypothetical. The above records confirm the presence of this species for New Brunswick.

Family Scirtidae Fleming, 1821

The Scirtidae (the marsh beetles), as their common name implies, are associated with marshes and other kinds of wetlands (Young 2002b). Larvae are generally aquatic and frequent stagnant and flowing waters such as forest pools, streams, rivers, various marsh types, and sphagnum bogs (Young 2002b). The North American species are badly in need of revision, especially the Genus *Cyphon*. Tetrault (1967), in an unpublisded Ph.D. dissertation revised the North American species of the family and described several new *Cyphon* species. However, since the dissertation was never published these names are not available. Later, Klausnitzer (1976) and Young and Stribling (1990) described some other North American species of *Cyphon*. Campbell (1991b) reported seven species of Scirtidae from New Brunswick. However, there have been no recent treatments of this family for New Brunswick or the Maritime provinces. Here, we report five species new to the province (Table 1). *Sarabandus robustus* (LeConte) is newly recorded from Canada; *Cyphon ruficollis* (Say), *Prionocyphon discoideus* (Say), and *Sacodes pulchella* (Guérin-Méneville) are added to the faunal list of the Maritime provinces.

Subfamily Scirtinae Fleming, 1821

Cyphon ruficollis (Say, 1825)**

http://species-id.net/wiki/Cyphon_ruficollis
Map 6

Material examined. New Brunswick, York Co., Fredericton, Odell Park, 45.9570°N, 66.6695°W, 19.VI.2005, R. P. Webster, mixed forest margin, beating foliage (1, RWC).

Bionomic notes. One individual was collected from foliage along a mixed forest margin during June.

Distribution in Canada and Alaska. ON, QC, **NB** (Campbell 1991b).

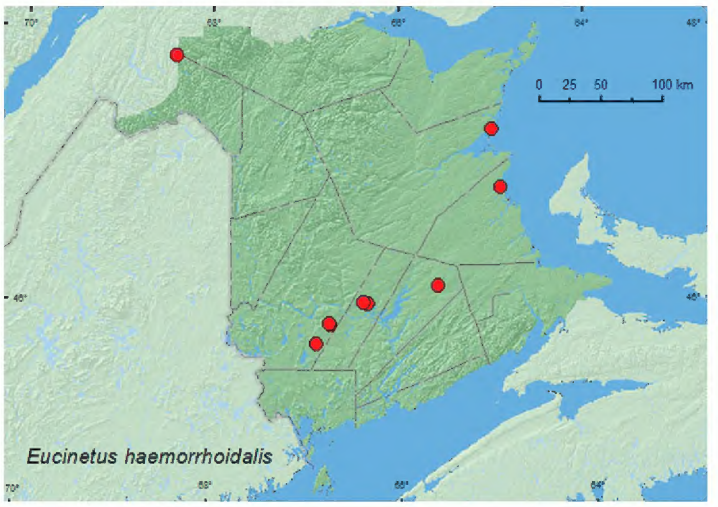
Elodes maculicollis Horn, 1880

http://species-id.net/wiki/Elodes_maculicollis
Map 7

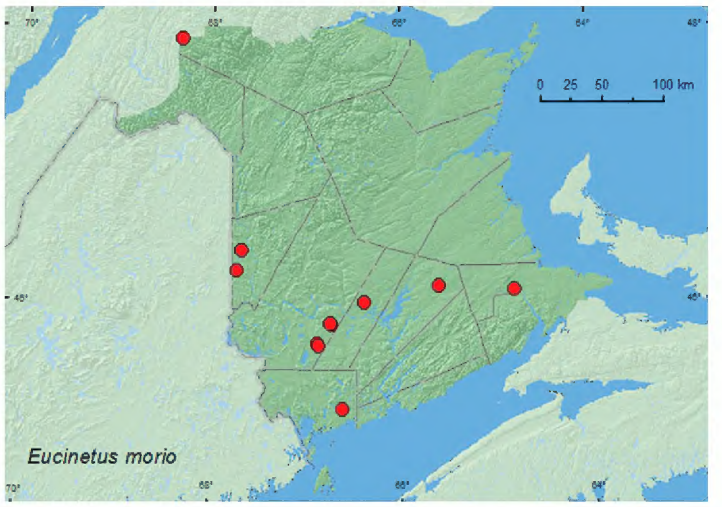
Material examined. New Brunswick, York Co., Charters Settlement, 45.8456°N, 66.7267°W, 16.V.2011, R. P. Webster, beaver dam among sticks and grass litter near overflow area of dam (near flowing water) (4, RWC).

Collection and habitat data. Adults were collected during May inside a beaver (*Castor canadensis* Kuhl) dam near an overflow area in the dam.

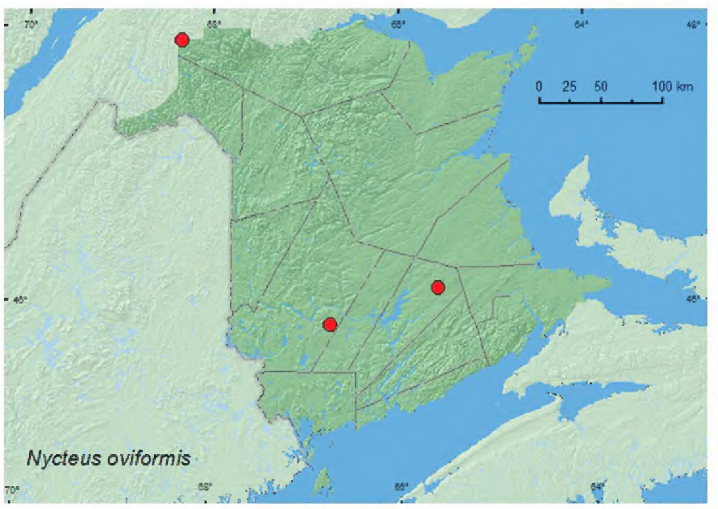
Distribution in Canada and Alaska. QC, **NB**, NS, NF (Campbell 1991b).



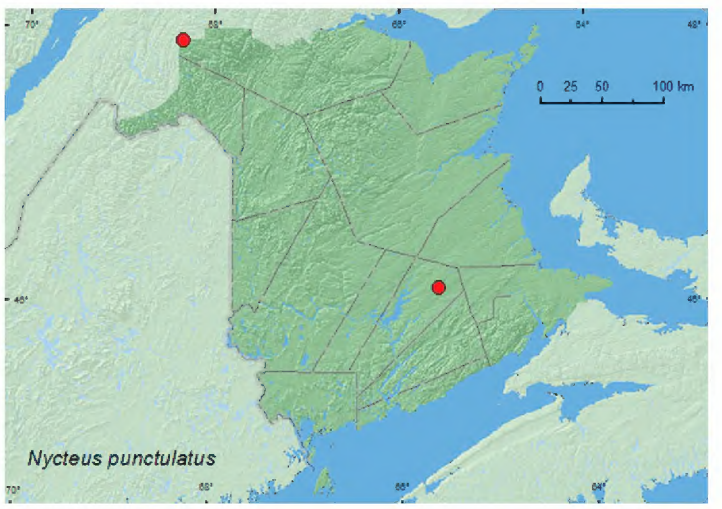
Map 1. Collection localities in New Brunswick, Canada of *Eucinetus haemorrhoidalis.*



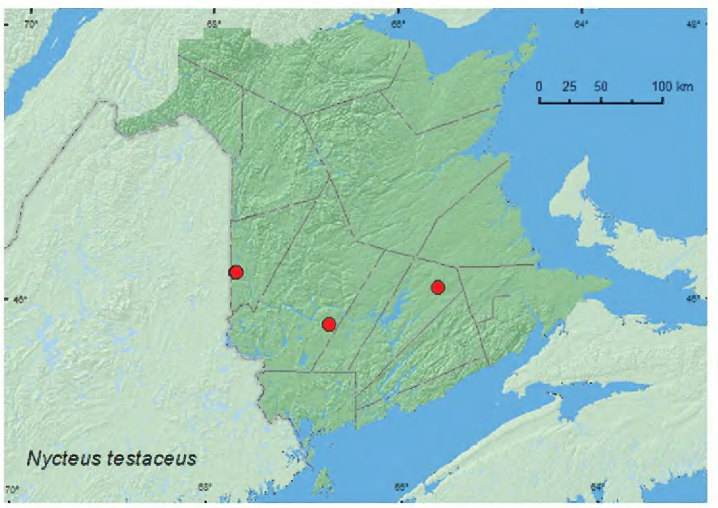
Map 2. Collection localities in New Brunswick, Canada of *Eucinetus morio.*



Map 3. Collection localities in New Brunswick, Canada of *Nycteus oviformis*.



Map 4. Collection localities in New Brunswick, Canada of *Nycteus punctulatus.*



Map 5. Collection localities in New Brunswick, Canada of *Nycteus testaceus.*

Map 6. Collection localities in New Brunswick, Canada of *Cyphon ruficollis.*

Prionocyphon discoideus* (Say)*
http://species-id.net/wiki/Prionocyphon_discoideus
Map 8

Material examined. New Brunswick, Carleton Co., Jackson Falls, Bell Forest, 46.2200°N, 67.7231°W, 8–16.VI.2009, R. Webster & M.-A. Giguère, mature hardwood forest, Lindgren funnel trap (1, AFC, RWC). **Restigouche, Co.**, Dionne Brook P.N.A., 47.9064°N, 68.3441°W, 14–28.VIII.2011, M. Roy & V. Webster, old-growth white spruce and balsam fir forest, Lindgren funnel trap (1, NBM). **Queens Co.**, Cranberry Lake P.N.A, 46.1125°N, 65.6075°W, 11–18.VI.2009, 18–25.VI.2009, 25.VI-1.VII.2009, R. Webster & M.-A. Giguère, old red oak forest, Lindgren funnel traps (5, AFC, RWC); Grand Lake Meadows P.N.A., 45.8227°N, 66.1209°W, 19–31.V.2010, 15–29.VI.2010, R. Webster & C. MacKay, old silver maple forest with green ash and seasonally flooded marsh, Lindgren funnel traps (2, AFC, RWC). **Sunbury Co.**, Acadia Research Forest, 45.9866°N, 66.3841°W, 24–30.VI.2009, R. Webster & M.-A. Giguère, red spruce forest with red maple and balsam fir, Lindgren funnel trap (1, AFC). **York Co.**, Charters Settlement, 45.8395°N, 66.7391°W, 28.VI.2005, R. P. Webster, mixed forest, u.v. light (1, RWC).

Collection and habitat notes. *Prionocyphon discoideus* was captured in Lindgren funnel traps deployed in a variety of deciduous and coniferous forest types in New Brunswick. These included mature mixed forests, an old red oak forest, an old silver maple forest near a seasonally flooded marsh, a red spruce forest and an old-growth white spruce and balsam fir forest. One individual was collected at an ultraviolet light. Adults were captured during May, June, July, and August.

Distribution in Canada and Alaska. ON, QC, **NB** (Campbell 1991b).

Sacodes pulchella* (Guérin-Méneville, 1843)*
http://species-id.net/wiki/Sacodes_pulchella
Map 9

Material examined. New Brunswick, Carleton Co., Bell Forest, 46.2200°N, 67.7231°W, 21–28.VI.2009, 19–31.VII.2009, R. Webster & M.-A. Giguère, mature hardwood forest, Lindgren funnel traps (2, AFC, RWC). **Queens Co.**, Cranberry Lake P.N.A, 46.1125°N, 65.6075°W, 25.VI–1.VII.2009, 1–10.VII.2009, 15–21.VII.2009, 21–28.VII.2009, R. Webster & M.-A. Giguère, old red oak forest, Lindgren funnel traps (6, AFC, RWC); same locality data and forest type, 13–20.VII.2011, M. Roy & V. Webster, Lindgren funnel trap (1, NBM). **Restigouche Co.**, Dionne Brook P.N.A., 47.9030°N, 68.3503°W, 27.VI-14.VII.2011, M. Roy & V. Webster, old-growth northern hardwood forest, Lindgren funnel trap (2, RWC). **York Co.**, 15 km W of Tracy off Rt. 645, 45.6848°N, 66.8821°W, 16–30.VI.2010, R. Webster & C. MacKay, old red pine forest, Lindgren funnel trap (1, RWC).

Collection and habitat data. This species was captured in Lindgren funnel traps deployed in a mature hardwood forest with sugar maple, American beech, and white

ash (*Fraxinus americana* L.), an old red oak forest, an old-growth northern hardwood forest with sugar maple and yellow birch, and an old red pine forest. Adults were captured during June and July.

Distribution in Canada and Alaska. ON, **NB** (Campbell 1991b).

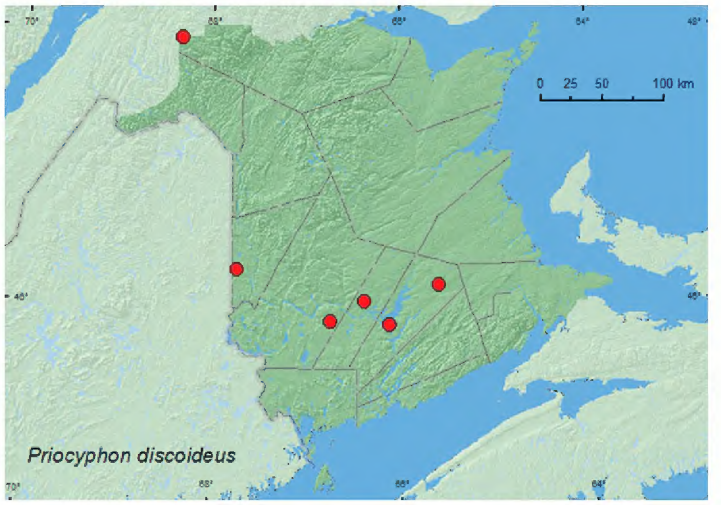
Sarabandus robustus* (LeConte, 1875)**
http://species-id.net/wiki/Sarabandus_robustus
Map 10

Material examined. Canada, New Brunswick, Charlotte Co., near New River, 45.2143°N, 66.6001°W, 2,VI.2006, R. P. Webster, eastern white cedar swamp, in moss and leaf litter (1, RWC).

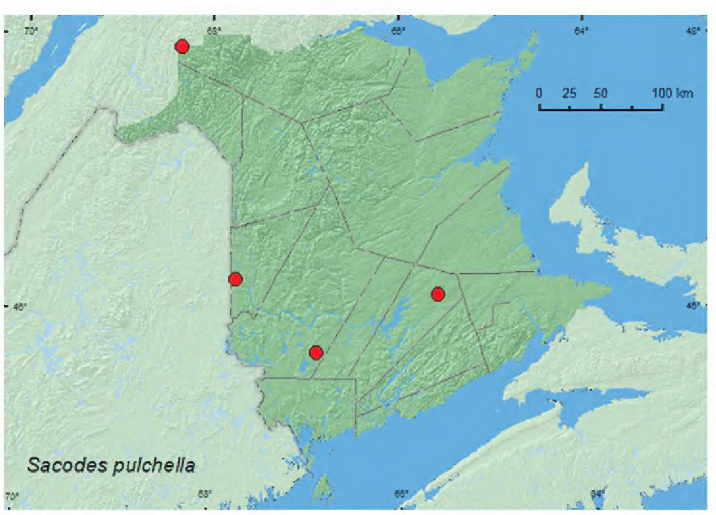
Collection and habitat data. The sole New Brunswick specimen was sifted from moss and leaf litter in an eastern white cedar swamp during early June.

Distribution in Canada and Alaska. (new Canadian record). This species is known from Massachusetts south to Florida (Young 2002a; Epler 2010).

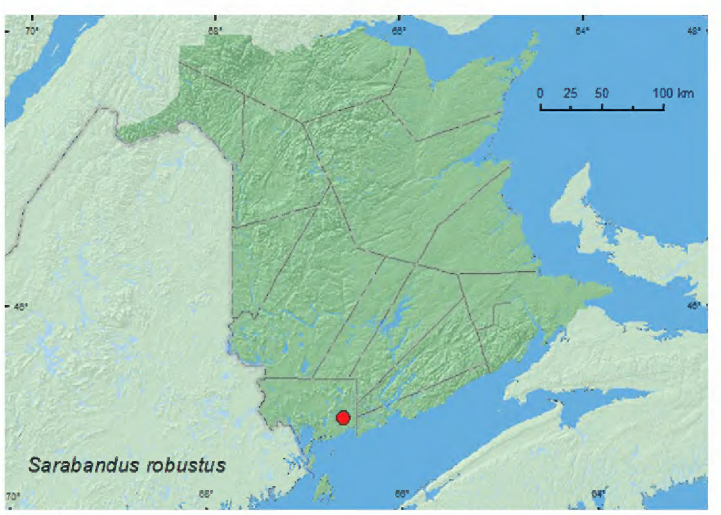
Map 7. Collection localities in New Brunswick, Canada of *Elodes maculicollis*.



Map 8. Collection localities in New Brunswick, Canada of *Prionocyphon discoideus*.



Map 9. Collection localities in New Brunswick, Canada of *Sacodes pulchella*.



Map 10. Collection localities in New Brunswick, Canada of *Sarabandus robustus*.

Acknowledgments

We thank Caroline Simpson (AFC) for editing this manuscript. Matthew Gimmel is thanked for many helpful comments that greatly improved this manuscript. Serge Laplante (Agriculture and Agri-Food Canada (CNC), Ottawa) is thanked for determining specimens and other invaluable assistance, and Nichole Brawn, Katie Burgess, Marie-Andrée Giguère, Nancy Harn, Cory Hughes, Colin MacKay, Wayne MacKay, Jessica Price, Michelle Roy, and Vincent Webster for technical assistance and collecting specimens. Natural Resources Canada, Canadian Forest Service; the Canadian Food Inspection Agency; and the USDA APHIS are thanked for funding the study on early detection of invasive cerambycids, which provided many specimens collected in Lindgren funnel traps. We thank the New Brunswick Environmental Trust Fund and New Brunswick Wildlife Trust Fund for funding various insect surveys over the past 7 years and the Meduxnekeag River Association for permission to sample beetles at the Meduxnekeag Valley Nature Preserve (which includes the Bell Forest). The New Brunswick Department of Natural Resources (Fish and Wildlife Branch) is thanked for issuing permits for sampling in the Protected Natural Areas and for providing logistical support.

References

Bouchard P, Bousquet Y, Davies AE, Alonso-Zarazaga MA, Lawrence JF, Lyal CHC, Newton AF, Reid CAM, Schmitt M, Ślipiński SA, Smith ABT (2011) Family-group names in Coleoptera (Insecta). ZooKeys 88: 1–972. doi: 10.3897/zookeys.88.807

Campbell JM (1991a) Family Scirtidae: marsh beetles. In: Bousquet Y (Ed) Checklist of Beetles of Canada and Alaska. Publication 1861/E, Agriculture Canada, Research Branch, Ottawa, Ontario, 142.

Campbell JM (1991b) Family Eucinetidae: plate-thigh beetles. In: Bousquet Y (Ed) Checklist of Beetles of Canada and Alaska. Publication 1861/E, Agriculture Canada, Research Branch, Ottawa, Ontario, 141.

Downie NM, Arnett RH Jr (1996) The beetles of northeastern North America. Volumes 1 and 2, Sandhill Crane Press, Gainesville, Florida, 1721 pp.

Epler JH (2010) The water beetles of Florida, an identification manual for the families Chrysomelidae, Curculionidae, Dryopidae, Dytiscidae, Elmidae, Gyrinidae, Haliplidae, Helophoridae, Hydraenidae, Hydrochidae, Hydrophilidae, Noteridae, Psephenidae, Ptilodactylidae and Scirtidae. Florida Department of Environmental Protection, Tallahasse, Florida, 414 pp.

Klausntizer B (1976) Zur Kenntnis der nordamerikenischen Arten der Gattung *Cyphon* Paykull (Col., Helodidae) (40. Beitrag zur Kenntnis der Helodidae). Polskie Pismo Entomologiczne 46: 439–453.

Lawrence JF, Newton AF Jr. (1980) Coleoptera associated with the fruiting bodies of slime molds (Myxomycetes). The Coleopterists Bulletin 34: 129–143.

Lindgren BS (1983) A multiple funnel trap for scolytid beetles (Coleoptera). The Canadian Entomologist 115: 299–302.

Majka CG (2010) Eucinetidae (Coleoptera) of the Maritime provinces of Canada. Journal of the Acadian Entomological Society 6: 16–21.

Tetrault RC (1967) A revision of the family Helodidae (Coleoptera) for American north of Mexico. Ph.D. thesis, University of Wisconsin, 160 pp.

Webster RP, Klimaszewski J, Pelletier G, Savard K (2009) New Staphylinidae (Coleoptera) records with new collection data from New Brunswick, Canada. I. Aleocharinae. In: Majka CG, Klimaszewski J (Eds) Biodiversity, biosystematics, and ecology of Canadian Coleoptera II. ZooKeys 22: 171–248. doi: 10.3897/zookeys.22.152

Webster RP, Smetana A, Sweeney JD, DeMerchant I (in press) New Staphylinidae (Coleoptera) records with new collection data from New Brunswick and an addition to the fauna of Quebec: Staphylininae. In: Klimaszewski J, Anderson R (Eds) Biodiversity, Biosystematics and Ecology of Canadian Staphylinidae (Coleoptera) II. ZooKeys.

Weiss HB, West E (1921) Additional fungus insects and their hosts. Proceedings of the Biological Society of Washington 34: 59–62.

Wheeler QD, Hoebeke RE (1984) A review of mycophagy in the Eucinetoidea (Coleoptera), with notes on an association of the eucinetid beetle, *Eucinetus oviformis*, with a Coniophoraceae fungus (Basidiomycetes: Aphyllophorales). Proceedings of the Entomological Society of Washington 86: 274–277.

Young DK (2002a) Family 35. Eucinetidae Lacordaire 1857. In: Arnett RH Jr, Thomas MC, Skelley PE, Frank JH (Eds) American Beetles. Volume 2. Polyphaga: Scarabaeoidea through Curculionidea, CRC Press, Boca Raton, Florida, 82–84.

Young DK (2002b) Family 37. Scirtidae Fleming 1821. In: Arnett RH Jr, Thomas MC, Skelley PE, Frank JH (Eds) American Beetles. Volume 2. Polyphaga: Scarabaeoidea through Curculionidea, CRC Press, Boca Raton, Florida, 87–89.

Young DK, Stribling JB (1990) Systematics of the North American *Cyphon collaris* species complex with description of a new species (Coleoptera: Scirtidae). Proceedings of the Entomological Society of Washington 92: 194–204.